

What is Claimed is:

1 1. A method for prophylaxis or treatment of sepsis and septic shock in an
2 human or animal comprising administering a therapeutically appropriate amount of a
3 sophorolipid mixture to a human or animal.

1 2. The method as claimed in Claim 1, wherein the mixture is administered
2 by a method selected from the group consisting of intraperitoneal administration,
3 intraarterial administration, and intravenous administration.

1 3. The method as claimed in Claim 2, wherein the mixture is administered
2 in a dose of between about 2 mg of the mixture per kilogram of the human or animal
3 and about 30 mg of the mixture per kilogram of the human or animal.

1 4. A method for producing sophorolipids for prophylaxis or treatment of
2 sepsis and septic shock in a human or animal comprising the steps of:

3 a. synthesizing the sophorolipids by fermentation of *Candida bombicola* in
4 a fermentation media to form a natural mixture of lactonic sophorolipids and non-
5 lactonic sophorolipids;

6 b. utilizing the natural mixture for prophylaxis or treatment of sepsis and
7 septic shock in a human or animal;

8 c. separating the lactonic sophorolipids from the natural mixture to form a
9 lactonic fraction and mixing all remaining fractions to form a non-lactonic fraction;

10 d. utilizing the lactonic fraction for prophylaxis or treatment of sepsis and
11 septic shock in a human or animal; and

12 e. utilizing the non-lactonic fraction for prophylaxis or treatment of sepsis
13 and septic shock in a human or animal.

1 5. A method for producing sophorolipids for prophylaxis or treatment of
2 sepsis and septic shock in a human or animal comprising the steps of:

3 a. synthesizing the sophorolipid by fermentation of *Candida bombicola* in
4 a fermentation media to form a natural mixture of lactonic sophorolipids and non-
5 lactonic sophorolipids; and

6 b. utilizing the natural mixture for prophylaxis or treatment of sepsis and
7 septic shock in a human or animal.

6. A method for producing sophorolipids for prophylaxis or treatment of sepsis and septic shock in a human or animal comprising the steps of:

a. synthesizing the sophorolipid by fermentation of *Candida bombicola* in a fermentation media to form a natural mixture of lactonic sophorolipids and non-lactonic sophorolipids;

b. separating the lactonic sophorolipids from the natural mixture to form a lactonic fraction and mixing all remaining fractions to form a non-lactonic fraction; and

c. utilizing the lactonic fraction for prophylaxis or treatment of sepsis and septic shock in a human or animal.

7. A method for producing sophorolipids for prophylaxis or treatment of sepsis and septic shock in a human or animal comprising the steps of:

a. synthesizing the sophorolipid by fermentation of *Candida bombicola* in a fermentation media to form a natural mixture of lactonic sophorolipids and non-lactonic sophorolipids;

b. separating the lactonic sophorolipids from the natural mixture to form a lactonic fraction and mixing all remaining fractions to form a non-lactonic fraction; and

c. utilizing the non-lactonic fraction for prophylaxis or treatment of sepsis and septic shock in a human or animal.

8. The method as claimed in Claim 1, wherein the sophorolipid is 17-L-[(2'-O- β -D-glucopyranosyl- β -D-glucopyranosyl)-oxy]-cis-9-octadecenoate based.

9. The method as claimed in Claim 8, wherein the 17-L-[(2'-O- β -D-glucopyranosyl- β -D-glucopyranosyl)-oxy]-cis-9-octadecenoate based sophorolipid is selected from the group consisting of 17-L-[(2'-O- β -D-glucopyranosyl- β -D-glucopyranosyl)-oxy]-cis-9-octadecenoate-6',6"-diacetate, Hexyl 17-L-[(2'-O- β -D-glucopyranosyl- β -D-glucopyranosyl)-oxy]-cis-9-octadecenoate, and Ethyl 17-L-[(2'-O- β -D-glucopyranosyl- β -D-glucopyranosyl)-oxy]-cis-9-octadecenoate.

10. The method as claimed in Claim 4, wherein the sophorolipid is 17-L-[(2'-O- β -D-glucopyranosyl- β -D-glucopyranosyl)-oxy]-cis-9-octadecenoate based.

11. The method as claimed in Claim 10, wherein the 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate based sophorolipid is selected from the group consisting of 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate-6',6"-diacetate, Hexyl 17-L[(2'-O-β-D glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate, and Ethyl 17-L[(2'-O-β-D glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate.

12. The method as claimed in Claim 5, wherein the sophorolipid is 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate based.

13. The method as claimed in Claim 12, wherein the 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate based sophorolipid is selected from the group consisting of 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate-6',6"-diacetate, Hexyl 17-L[(2'-O-β-D glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate, and Ethyl 17-L[(2'-O-β-D glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate.

14. The method as claimed in Claim 6, wherein the sophorolipid is 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate based.

15. The method as claimed in Claim 14, wherein the 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate based sophorolipid is selected from the group consisting of 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate-6',6"-diacetate, Hexyl 17-L[(2'-O-β-D glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate, and Ethyl 17-L[(2'-O-β-D glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate.

16. The method as claimed in Claim 7, wherein the sophorolipid is 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate based.

17. The method as claimed in Claim 16, wherein the 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate based sophorolipid is selected from the group consisting of 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate-6',6"-diacetate, Hexyl 17-L[(2'-O-β-D glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate, and Ethyl 17-L[(2'-O-β-D glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate.

1 18. The method as claimed in Claim 4, wherein the mixture is administered
2 by a method selected from the group consisting of intraperitoneal administration,
3 intraarterial administration, and intravenous administration.

1 19. The method as claimed in Claim 5, wherein the mixture is administered
2 by a method selected from the group consisting of intraperitoneal administration,
3 intraarterial administration, and intravenous administration.

1 20. The method as claimed in Claim 6, wherein the mixture is administered
2 by a method selected from the group consisting of intraperitoneal administration,
3 intraarterial administration, and intravenous administration.

1 21. The method as claimed in Claim 7, wherein the mixture is administered
2 by a method selected from the group consisting of intraperitoneal administration,
3 intraarterial administration, and intravenous administration.

1 22. The method as claimed in Claim 1, wherein the mixture is administered
2 in a dose of between about 2 mg of the mixture per kilogram of the human or animal
3 and about 30 mg of the mixture per kilogram of the human or animal.

1 23. The method as claimed in Claim 4, wherein the mixture is administered
2 in a dose of between about 2 mg of the mixture per kilogram of the human or animal
3 and about 30 mg of the mixture per kilogram of the human or animal.

1 24. The method as claimed in Claim 5, wherein the mixture is administered
2 in a dose of between about 2 mg of the mixture per kilogram of the human or animal
3 and about 30 mg of the mixture per kilogram of the human or animal.

1 25. The method as claimed in Claim 6, wherein the mixture is administered
2 in a dose of between about 2 mg of the mixture per kilogram of the human or animal
3 and about 30 mg of the mixture per kilogram of the human or animal.

1 26. The method as claimed in Claim 7, wherein the mixture is administered
2 in a dose of between about 2 mg of the mixture per kilogram of the human or animal
3 and about 30 mg of the mixture per kilogram of the human or animal.

 27. A composition for prophylaxis or treatment of sepsis and septic shock
5 in a human or animal comprising a mixture of sophorolipids.

1 28. The composition as claimed in Claim 27 having the formula 17-L-[(2'-
2 O- β -D-glucopyranosyl- β -D-glucopyranosyl)-oxy]-cis-9-octadecenoate-6',6"-diacetate.

1 29. The composition as claimed in Claim 27 having the formula Ethyl 17-L-
2 [(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate.

1 30. The composition as claimed in Claim 27 having the formula Hexyl 17-L-
2 [(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-octadecenoate.

1 31. The composition as claimed in Claim 27 mixed with a pharmaceutically
2 acceptable carrier.

1 32. The composition as claimed in Claim 31, wherein the pharmaceutically
2 acceptable carrier is selected from the group consisting of physiologically compatible
3 buffers, physiological saline, a mixture consisting of saline and glucose, and
4 heparinized sodium-citrate-citric acid-dextrose solution.

1 33. The composition as claimed in Claim 27, wherein composition is a
2 pharmaceutically acceptable salt.

1 34. The application of sophorolipids synthesized by fermentation of
2 *Candida bombicola* in a fermentation media to form a natural mixture of lactonic
3 sophorolipids and non-lactonic sophorolipids in combination with at least one
4 sophorolipid selected from the group consisting of:

5 a. Sophorolipids synthesized by fermentation of *Candida bombicola* in a
6 fermentation media to form a natural mixture of lactonic sophorolipids
7 and non-lactonic sophorolipids;

8 b. 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-
9 octadecenoate-6',6"-diacetate;

10 c. Ethyl 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-
11 octadecenoate;

12 d. Hexyl 17-L-[(2'-O-β-D-glucopyranosyl-β-D-glucopyranosyl)-oxy]-cis-9-
13 octadecenoate; and

14 e. combinations thereof,

15 for prophylaxis or treatment of sepsis and septic shock in a human or animal.

1 35. The application of the sophorolipids as claimed in Claim 34 in
2 combination with known agents for prophylaxis or treatment of sepsis and septic
3 shock in a human or animal.